RENOLIT

Rely on it.

INSTALLATION MANUAL

EXCELLENCE
IN ROOFING

Sales Manager
Stephen Baddeley – 07872 194488

National Technical Manager
Tony Brown - 07944 778241

Sales Office
01670 718283
renolit.cramlington@renolit.com

WWW.ALKORPROOF.COM
WWW.RENOLIT.COM/ROOFING

There are bound to be questions if you don't know, don't guess, ASK!

RENOLIT

Rely on it.

INDEX

Help, Contact Numbers	P 2
Storage & Labelling	P 5
Equipment	P 6
Compatibility & Cleaning	P 7
Hot air Welding – Checks, Temperature & Testing	P 9
Welding – Overlaps - Welding Gun	P 10
Welding Check & Seam Sealer	P 11-12
Automatic Welding, Weld Test	P 13
Solvent Welding	P 14-15
RENOLIT ALKORPLAN F, Mechanically fastened System;	
VCL & insulation	P 16
Roof Sheet - Fasteners - **RENOLIT** ALKORPLAN metalsheet	P 17-19
Butt Straps, T Joints, End Joints	P 20-21
Upstands, Drip Edges	P 22
Corners	P 23
Repairs	P 24
Welds	P 25
RENOLIT ALKORPLAN A - Adhered system	P 26-27
RENOLIT ALKORPLAN L – Loose laid & Ballasted System	P 28
RENOLIT ALKORPLAN, ALKORTOP, ALKORTEC	P 30
Pipe Penetrations, uPVC fittings, Profile System	P 31-32
Accessories	P 32
Details for Mechanical Fastening	P 34-47
Details for Loose laid & Ballasted	P 48-53
Details for Adhered	P 54-59
General Details	P 60-67
Summary of Measurements	Back page

Bord Agrément na hÉireann
Irish Agrément Board
06-/02040

CPD CERTIFIED
Construction CPD Certification Service

Factory Mutual System

NBS SERVICES

The information contained in the present commercial literature has been given in good faith and with the intention of providing information. It is based on current knowledge at the time of issue, and may be subject to change without notice. Nothing contained herein may induce the application of our products without observing existing patents, certificates, legal regulations, national or local rules, technical approvals or technical specifications or the rules and practices of good workmanship for this profession.The purchaser should verify whether import, advertising, packaging, labelling, composition, possession, ownership and the use of our products or the commercialisation of them are subject to specific territorial rules. He is also the sole person responsible for informing and advising the final end user. When faced with specific cases or application details not dealt with in the present guidelines, it is important to contact our technical services, who will give advice, based on the information at hand and within the limitations of their field of expertise. Our technical services cannot be held responsible for the conception of, nor the execution of the works. In the case of negligence of rules, regulations and duties on the part of the purchaser we will disclaim all responsibility. The colours respect the UV resistance required by EOTA, but are still subject to the natural change over time. Are excluded from the guarantee: aesthetic considerations in case of partial repair of deficient membrane covered by the guarantee.

WWW.ALKORPROOF.COM - WWW.RENOLIT.COM/ROOFING

BBA BRITISH BOARD OF AGRÉMENT

10 YEAR WARRANTY 10 YEAR

ROOFCOLLECT® Recycling System for Thermoplastic Membranes

ISO 9001 CERTIFIED VINÇOTTE

CE

vinyl plus

The British Board of Agrément have assessed the life expectancy of **RENOLIT** ALKORPLAN F used in the United Kingdom to be in excess of 35 years.

RENOLIT ALKORPLAN roofing products and Systems have a standard guarantee of 10 years, and are installed by approved contractors and installers who are trained and assessed by **RENOLIT**.

All **RENOLIT** waterproofing membranes for roofing are part of the ROOFCOLLECT® collection and recycling programme.

The **RENOLIT** division responsible for the roofing activity has been approved to EN ISO 9001:2008.

Storage & Labelling

This manual sets out the installation methods for **RENOLIT** ALKORPLAN membranes.

1. Storage
The rolls are delivered to site on pallets. These should be stored in a dry place or, if this is not possible, protected against exposure to damp, rain, frost and snow.

2. Labelling
All **RENOLIT** roofing membranes are labelled with type number, batch number, width and thickness. A record should be kept of this label so that, in the event of a claim, it can be checked against laboratory test samples. Batch samples are kept of all material manufactured.

Equipment

- Leister TRIAC manual hot air welding gun, 110 volt or similar.
- 20 mm nozzle for detail work.
- 40 mm nozzle for seam welding.
- 40 mm silicone roller for most welding.
- 6 mm brass corner roller to weld awkward details.
- Weld testing probe
- Wooden template for welding into right angles

- Tools for Leister maintenance-brushes, screwdrivers, grips.
- Small (2 inch) soft brush for welding gun filter maintenance
- Wire brush for nozzle cleaning

- Tools for measuring, marking and cutting
- Tape measure
- Scissors
- Retractable bladed craft knife
- Marker pen
- String line
- Tin snips for cutting **RENOLIT** ALKORPLAN metalsheet

Compatibility

Chemical compatibility
Please check the data sheet for general information on the chemical compatibility of **RENOLIT** ALKORPLAN roofing membranes.

Insulation
As a general rule all synthetic insulation boards must have a separation layer either included during manufacture or laid before installing the membrane.

Bitumen products
RENOLIT ALKORPLAN must not be laid in direct contact with any bitumen product. A separation layer must be used.

Other PVC membranes or other Flexible PVC products
RENOLIT ALKORPLAN must not be laid in direct contact with, or welded to other plasticised PVC membranes. As a general rule, **RENOLIT** ALKORPLAN membranes should not be laid over old synthetic or rubber membranes. These membranes should be removed.

Cleaning

Cleaning is best done with a rag. If dirt is to be removed, use a spray with water and a diluted detergent with water or **RENOLIT** ALKORPLUS cleaner. If bituminous products have to be removed from the membrane only **RENOLIT** ALKORPLUS cleaner may be used.

Hot Air Welding, temperature & testing

Hot Air Welding
Preliminary checks ensure the nozzle is clean and open across its entire width. Ensure the filter is cleaned.

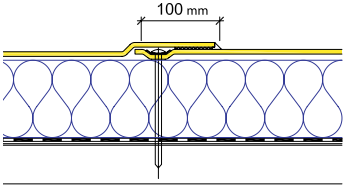
Temperature
Adjust the welding temperature in the hand held welding gun to allow a flow of hot air that induces a slow charring on a piece of wood.

If the welding gun has an internal heat setting with digital thermometer display, set this to 480°C and allow the gun ten minutes to heat up. This may be adjusted depending upon ambient conditions.

Weld Testing
Make a weld sample to test the material you will be using and to test that the settings on your welding gun are correct.

Check the weld test sample with a destructive test. (see testing on Page 13)

Cables & Weld Overlaps



Cables

To avoid a voltage drop, never use an excessively long extension cable or share a power cable with others.To prevent damage and fire, never use an extension cable that is still coiled on a roll.

Weld Overlaps

As a general rule, **RENOLIT** ALKORPLAN weld overlaps must be 100 mm on mechanically fastened systems, 80 mm on adhered systems and 50 mm on ballasted systems. It is important to have a constant weld width of min. 30 mm.

Welding Gun & Welding Check

Welding Gun
The weld is now carried out with the hot air welding gun held between the sheets of **RENOLIT** ALKORPLAN to be welded at 45° to the welding line.

Roll the weld with the silicone roller held about 1 cm from the nozzle of the gun. The operative has three factors at his control:

- The **HEAT** of the welding gun
- The **SPEED** at which the welding gun is moved
- The **PRESSURE** of the roller on the two **RENOLIT** ALKORPLAN sheets

Welding Check
On completion of the weld the operative must check its integrity by drawing a weld checking probe down the length of the weld. The probe will find any unwelded areas which must be rewelded immediately with hot air.

Seam Sealer

When an area of welding is completed and checked the **RENOLIT** ALKORPLAN seam sealer must be applied. Ensure that the membrane is clean and dry and dust free before the application of the seam sealer. It is good practice to apply the seam sealer as soon as possible after the welding is completed and checked although care must be taken not to apply seam sealer to areas that will have further membrane welded to them.

Automatic Welding & Weld Test

Automatic Welding
There are various automatic welders on the market. The manufacturer's representatives will be available, on request, to set up the machines and train operatives in their use – especially when buying a new machine. Please check with our technical dept. for the required weld widths approved for the various machines.

Weld Test
When hot air welding with hand or automatic tools it is good practice to carry out a peel test before every welding session on a 50 mm wide sample weld, so as to ensure that the tool settings are correct. If the weld has been made correctly the membrane will give way before the weld.
A 50 mm wide weld should support a weight of at least 15 kgs.

Solvent welding & solvent brush

Solvent welding

RENOLIT ALKORPLAN can also be solvent welded but this can only be used for long seams, NOT for any detail work & strict criteria must be obeyed before the use of solvent welding can be approved.

- The air temperature must be above 5° centigrade
- Relative humidity < 60%
- It may only be used for welding new **RENOLIT** ALKORPLAN
- **RENOLIT** ALKORPLAN must be clean, dry & dust free & laying flat

Check the expiry date of the solvent. Do not use old solvent or solvent that has been opened at an unknown date.

Do not stand the solvent brush applicator on the membrane.

Solvent brush

The solvent is applied using a brush applicator between the sheets to be welded. The brush applicator is moved in a circular motion applying the minimum amount of solvent to both sheets being welded.

Solvent welding cont.

Immediately following the brush applicator, a rolled rag is used to apply pressure to the welded joint, smoothing it out and expelling any excess solvent.

As the welding progresses a weight (e.g. sandbag) is placed along the line of the weld to give a short period of constant pressure until the adjacent welded area is completed. The weld must be checked as before, using the weld checking probe and any unwelded areas sealed using hot air welding techniques.

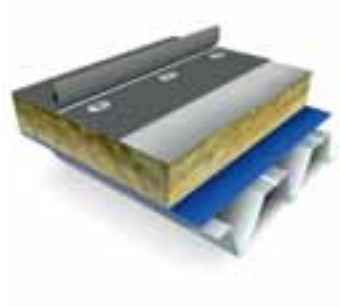
A weld test must be included. It is good practice to carry out a peel test before every welding session on a 50 mm wide sample weld, to ensure that the welding process is correct.

If the weld has been made correctly, the membrane will give way before the weld. A 50 mm wide weld should support a weight of at least 15 kg. Testing after 1 hour curing.

Solvent welding cannot be used to reweld unwelded areas when solvent was used initially.

Seam sealer is then applied to the finished areas.

RENOLIT ALKORPLAN F – the fixed system vapour control layer & insulation



The Fixed System
RENOLIT ALKORPLAN F is the most common system used when installing **RENOLIT** roofing membranes. It is usually laid on a trapezoidal metal deck.

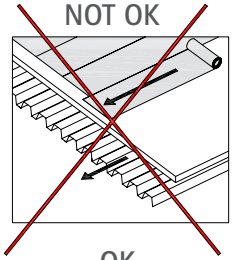
Vapour Control Layer & Insulation
Vapour Control Layer is laid over the metal deck. It is overlapped by a minimum of 100 mm and sealed.

The specified thickness of insulation board is laid in a "break-bonded" style and fixed according to the wind loading calculations and the manufacturers approved fixing system.

At terminations, the VCL is taken up and sealed to details and penetrations in accordance with Part L2 of the UK Building Regulations.

RENOLIT ALKORPLAN F – roofing sheet

Roofing Sheet
The **RENOLIT** ALKORPLAN roofing membrane is laid at 90° to the deck direction.



The **RENOLIT** ALKORPLAN roofing membrane has two lines printed along the edge during the manufacturing process. The first line is the centre line for the fasteners and the second line is the extent of the overlap of the adjacent sheet. This is known as the weld line.
There must always be a minimum of 10 mm between the edge of the pressure plate and the edge of the roofing membrane.

FASTENERS & RENOLIT ALKORPLAN metalsheet edge details

Fasteners
The pressure plates are spaced according to the wind loading calculation but not closer than twice the length of one plate. A minimum of 2 fasteners per m^2 must be respected at all times. Only approved fasteners shall be used. If in doubt contact our technical department. When installing the pressure plates ensure that they are not over tightened. The pressure plates work in a different way from those used to fix the insulation board. When installed correctly they should move when twisted firmly with the thumb and forefinger. A fastener that is over tightened becomes ineffective and places greater strain on the adjacent screws. Over tightened screws must be replaced.

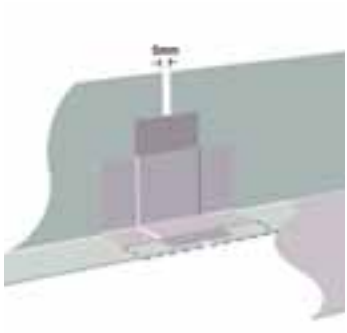
RENOLIT ALKORPLAN metal-sheet Edge Details
At the perimeter of the roof the **RENOLIT** ALKORPLAN metal profiles are used to terminate the **RENOLIT** ALKORPLAN roofing membrane. They are

FASTENERS & RENOLIT ALKORPLAN metalsheet edge details

prefabricated to the required profile for each job and are cut and bent on site to fit the edge detail of the roof.

The **RENOLIT** ALKORPLAN metal profiles are fixed with a waterproof joint before the installation of the main **RENOLIT** ALKORPLAN roofing membrane. Unless otherwise advised, the metal profile is fixed using self tapping screws at 250 mm centres with the first fixing 50 mm from the end of the profile. The metal profiles are fixed leaving a minimum 5 mm gap between each profile. The gap is covered with a 50 mm wide Aluband tape. This gives a 50 mm wide unwelded gap between sections which allows a sufficient area of membrane for expansion and contraction movement in the joint.

A 200 mm wide strap of **RENOLIT** ALKORPLAN is then welded over the joint to form a waterproof edge detail for the termination of the **RENOLIT** ALKORPLAN field sheet.



Butt Straps
T Joints & Capillaries

Butt Straps
Care must be taken to ensure that **RENOLIT** ALKORPLAN membrane is securely welded into the right angle corners of upstands.
If butt strap is spot welded into position and these right angle welds are carried out first, this will ensure that the joint is waterproof. After welding, the joint must be checked but the seam sealer must wait until the field sheet has been installed. It is not good practise to weld **RENOLIT** ALKORPLAN roofing membrane over seam sealer. (Axon M1, Page 34)

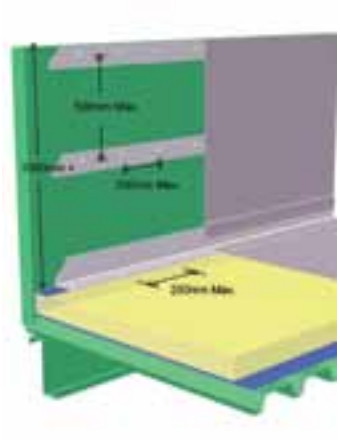
T Joints & Capillaries
Where the **RENOLIT** ALKORPLAN field sheet runs across a butt strap a "T" joint will be created. The weld over the capillary should be firmly welded using the 6 mm brass roller, before the weld between membrane and **RENOLIT** ALKORPLAN metalsheet is completed.

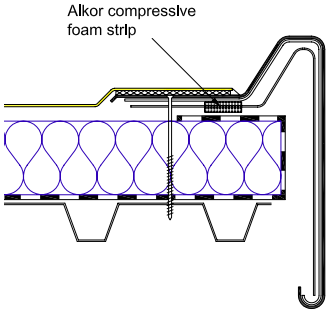
End Joints

End joints of subsequent rolls of **RENOLIT** ALKORPLAN roofing membrane must be cleaned to remove any tape or adhesive used in the rolling of the membrane and then must be overlapped by 250 mm and then welded in the normal way. The end joints across the roof must be staggered to give a minimum of 500 mm between each joint.

Exposed corners of **RENOLIT** ALKORPLAN roofing membrane field sheet must be rounded. Ensure that the diameter of this rounded effect on the corner is same over the whole roof. This will give the roof a neat appearance.

Direction changes & Upstands – Drip edges – Corners





Direction Changes & Upstands
Where the roof shape changes from a horizontal plane to an angled or vertical plane, a section of **RENOLIT** ALKORPLAN metal profile must always be used to facilitate this change of direction. The **RENOLIT** ALKORPLAN roofing membrane is cut to fit the horizontal **RENOLIT** ALKORPLAN metalsheet plane and welded to it in the normal way. The **RENOLIT** ALKORPLAN metalsheet follows the change of direction and the membrane is cut to fit the vertical leg of the **RENOLIT** ALKORPLAN metalsheet section and welded to it. When a right angled section of the metalsheet is installed, it must only be fastened to the substrate, in the horizontal plane. (Axon M2 Page 35; Detail F1, Page 36)

The spacing beween intermediate profiles is 500 mm. The intermediate profile can be substituted by gluing the **RENOLIT** ALKORPLAN membrane to the roof substrate. The **RENOLIT** ALKOR-

Direction changes & Upstands – Drip edges – Corners

PLUS$_{81040}$ contact glue must be applied on both sides.
(2 x 150 g/m^2 consumption).

Drip Edges
Compressive foam tape must be used to seal the drip edge to the galvanised profile and substrate to prevent wind ingress.

Corners
Corners are formed by cutting and welding the areas of roofing sheet to the point of the corner and welding a prefabricated internal or external corner piece over the point where the roofing sheets meet. Care must be taken when installing corners to ensure that the membrane is welded into the point of the corner. If the corner piece is spot welded into position and the point of the corner is welded first, this will ensure that the corner will be waterproof when the rest of the welding has been carried out.

Damage & Repairs

Damage to membrane must be repaired using welded patches. Ensure the area is clean and dry. The patches must be cut to allow a minimum welded width of 50 mm and a 50 mm gap between the damage and the edge of the patch. Hence the smallest patch to repair a pinhole would be 200 mm in diameter.

It is good roofing practise to disguise patches.
The customer does not want a new roof with patches in it. For patches in a new roof, cut the required length from a full width roll of **RENOLIT** ALKORPLAN roofing membrane and weld this piece into position as if it were a roll end. Round the corners in the normal way.

Welds

With the hot air welding gun, the installer must endeavour to form a 50 mm wide weld using the fish tail nozzle. The welding must be continuous and have no air inclusions. Narrow welds will be condemned.

Hot air welding can be used on all areas to be waterproofed. Solvent welding can only be used on the lap joints of new **RENOLIT** ALKORPLAN roofing material and then only when the conditions are appropriate (see earlier, under solvent welding).

RENOLIT ALKORPLAN A
the adhered system

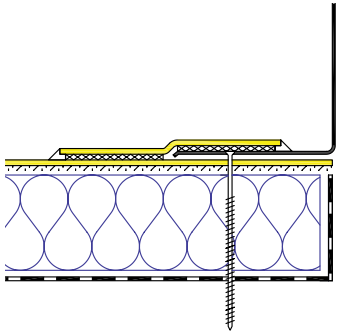
The **RENOLIT** ALKORPLAN A system uses **RENOLIT** ALKOR-PLUS$_{81068}$ PU glue to glue the **RENOLIT** ALKORPLAN fleece backed membrane to the substrate of the roof. It is applied from single can or from a number of cans mounted on an applicator trolley.

The amount of glue to be used is specified by the wind load calculation carried out by a qualified engineer.

When the adhesive is applied in lines, as illustrated, it must be squeegeed across the width of the membrane to create a full bond.

RENOLIT ALKORPLAN A
the adhered system

The installation of the **RENOLIT** ALKORPLAN A system differs from the **RENOLIT** ALKORPLAN F, fixed system in one important way. The **RENOLIT** ALKORPLAN metal profiles are installed, fixed and waterproofed over the installed **RENOLIT** ALKORPLAN roof sheet.

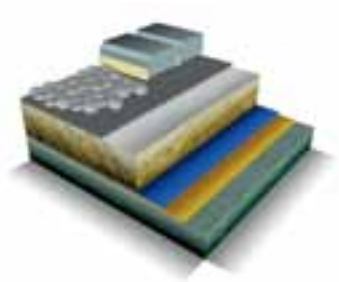


The junction between metal-sheet profile and roofing sheet is then waterproofed by a cover strap, welded to both in the approved manner. (Axon A3 Page 56; Detail A3 page 57)

Corners, vents and pipes are installed using the same methods as for the **RENOLIT** ALKORPLAN F system.

The **RENOLIT** ALKORPLAN metal perimeter roof terminations are waterproofed as described in the **RENOLIT** ALKORPLAN F system but, as detailed above, fixed over the membrane and waterproofed.

L – The loose laid and ballasted system



The loose laid and ballasted system

The **RENOLIT** ALKORPLAN used in this system is specially formulated for use in the extreme environments caused when the membrane is covered and held down using a ballasted restraining system. It is glass-fibre reinforced to give extra dimensional stability.

Do NOT attempt to use other types of membrane for this application.

L – The loose laid and ballasted system

The essential difference with this system is that the **RENOLIT** ALKORPLAN roofing sheet is loose laid. The welded seams and edge restraints are carried out as described in the **RENOLIT** ALKORPLAN F system. The roofing sheet is protected by a PVC/fleece laminate where corner support pads and paving slabs are employed.

RENOLIT produce 3 different roofing membranes:

RENOLIT ALKORPLAN
Plasticised PVC

RENOLIT ALKORTOP
TPO – Thermoplastic Polyolefin

RENOLIT ALKORTEC
EVA/EBA - Ethylene/Vinyl Acetate - Ethylene/Butyl Acrylate

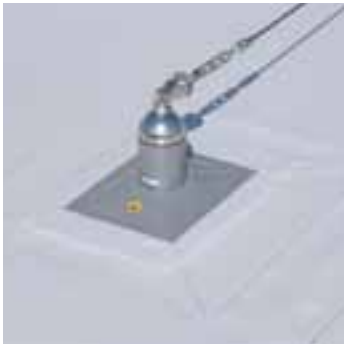
These are all different chemical compounds

THEY ARE NOT COMPATIBLE

This Manual is produced for **RENOLIT** ALKORPLAN installation. Should you require further training on the other products, please contact the **RENOLIT** Technical dept.

Pipe penetrations U-PVC fittings

Pipe Penetrations
Penetrations through the roofing sheet such as pipe outlets, supports for air handling units, posts for Mansafe systems, etc. are waterproofed with a patch of **RENOLIT** ALKORPLAN membrane stretched over the obstruction, and welded to a collar of membrane around the penetration. This is then waterproofed with seam sealer and/or a stainless steel clip. (Detail G4, Page 65)



U-PVC Fittings
RENOLIT ALKORPLAN can be hot air welded directly to rooflights, outlets, pipes and roof fittings made from unplasticised PVC. (Axon G1 Page 60; Detail G1 Page 61)

Profile system accessories

Profile System

Extruded profiles can be welded to **RENOLIT** ALKORPLAN roofing membrane to simulate lead, zinc, aluminium and copper standing seam roofs. The 3 meter lengths are spot welded into position and then the base of the A cross section is welded to the roof sheet.

Accessories

There is a full range of **RENOLIT** ALKORPLAN and **RENOLIT** ALKORPLUS accessories:

- Internal and external preformed corners
- **RENOLIT** ALKORPLAN metalsheet PVC/Steel laminate
- Bottles for seam sealer and welding fluid
- Solvents, cleaners and adhesives
- Seam sealer
- Welding probes

Profile system accessories

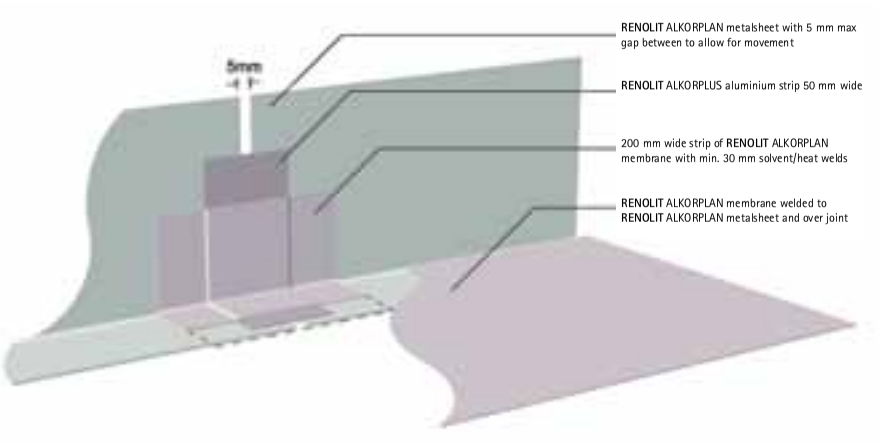
- Welding brushes
- Extruded profile
- **RENOLIT** ALKORPLAN protection layers.
- **RENOLIT** ALKORPLAN walkway. (Detail F5, Page 42; Detail F6, Page 43)
- Pipe outlets flexible and stainless steel and grills. (Axon G2, Page 63; Detail G2, Page 62; Detail G3, Page 64)

F

Axonometric M1

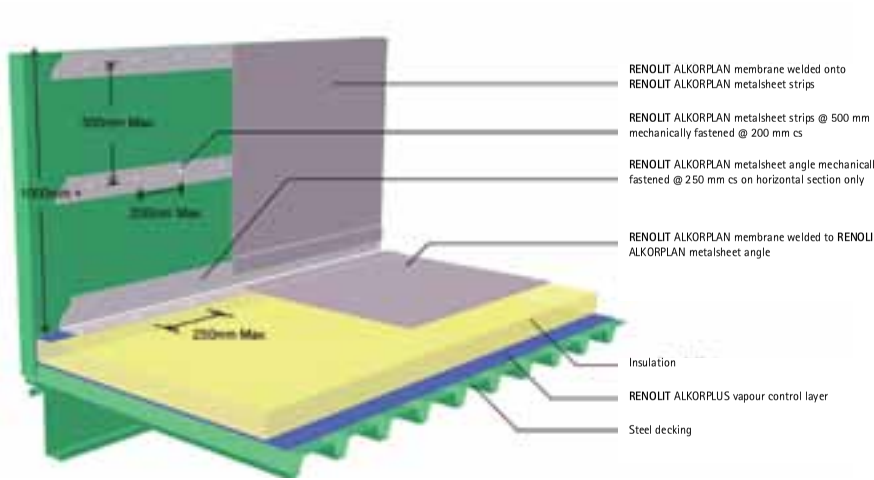
RENOLIT ALKORPLAN metalsheet Section Joints

RENOLIT ALKORPLAN metalsheet sections are mechanically fastened leaving a 3 to 5 mm max. gap to allow for thermal movement.
A strip of 50 mm wide Aluminium Tape is applied over the gap to create an unwelded area.
This is then covered with 200 mm wide **RENOLIT** ALKORPLUS Junction Strip welded to the two metal sections with minimum 30 mm welds.
The **RENOLIT** ALKORPLAN roofing sheet is then welded to **RENOLIT** ALKORPLAN metalsheet sections and junction strip.


5mm
RENOLIT ALKORPLAN metalsheet with 5 mm max gap between to allow for movement
RENOLIT ALKORPLUS aluminium strip 50 mm wide
200 mm wide strip of **RENOLIT** ALKORPLAN membrane with min. 30 mm solvent/heat welds
RENOLIT ALKORPLAN membrane welded to **RENOLIT** ALKORPLAN metalsheet and over joint

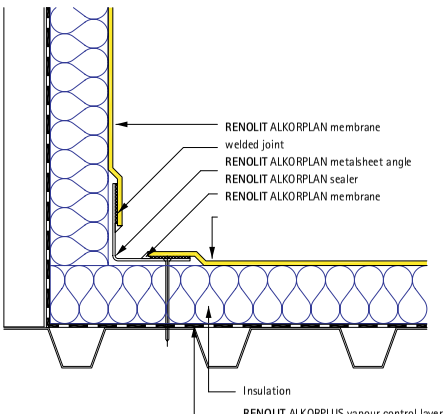
F

Axonometric M2
Application to Vertical Faces
RENOLIT ALKORPLAN metalsheet strips are mechanically fastened to the vertical substrate at intervals of 500 mm. **RENOLIT** ALKORPLAN membrane is welded to the **RENOLIT** ALKORPLAN metalsheet strips to form a fully supported vertical waterproof detail.


RENOLIT ALKORPLAN membrane welded onto **RENOLIT** ALKORPLAN metalsheet strips
RENOLIT ALKORPLAN metalsheet strips @ 500 mm cs mechanically fastened @ 200 mm cs
RENOLIT ALKORPLAN metalsheet angle mechanically fastened @ 250 mm cs on horizontal section only
RENOLIT ALKORPLAN membrane welded to **RENOLIT** ALKORPLAN metalsheet angle
Insulation
RENOLIT ALKORPLUS vapour control layer
Steel decking

F

Detail F1
Typical Upstand Detail
RENOLIT ALKORPLAN metalsheet angle is mechanically fastened to the substrate around the base of the upstand.
RENOLIT ALKORPLAN membrane is then welded to the **RENOLIT** ALKORPLAN metalsheet angle on the horizontal and the vertical faces.
Where the upstand is in excess of 500 mm high then additional support is required to the **RENOLIT** ALKORPLAN membrane on the vertical face.
For further information refer to Axonometric M2.

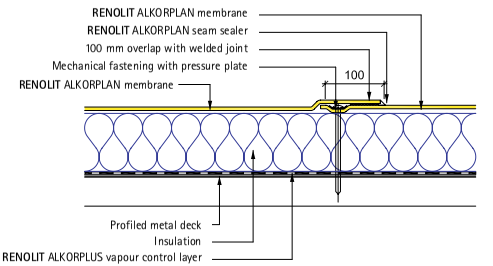


F

Detail F2

Mechanically Fixed Seam

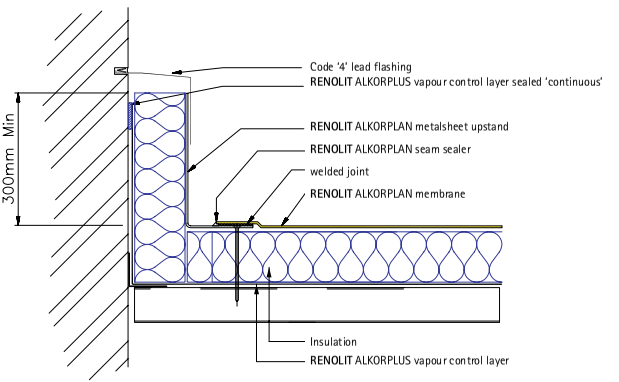
RENOLIT ALKORPLAN membrane is rolled out over the prepared roof. The edge is fastened with pressure plates at intervals determined by the wind loading requirements. The pressure plates are located 10 mm min. from the edge of the **RENOLIT** ALKORPLAN membrane.
The adjoining roll overlaps the fastened edge by 100 mm min. and is welded to it.



F

Detail F3
Typical Wall Abutment
RENOLIT ALKORPLAN metalsheet is mechanically fastened to the substrate forming an upstand against the abutment face.
RENOLIT ALKORPLAN membrane is then welded to the **RENOLIT** ALKORPLAN metalsheet.
The detail is then finished with a lead or pressed metal cover flashing and pointing.

Note:
If wall construction is not insulated block, then insulation will be required to a minimum height of 300 mm.



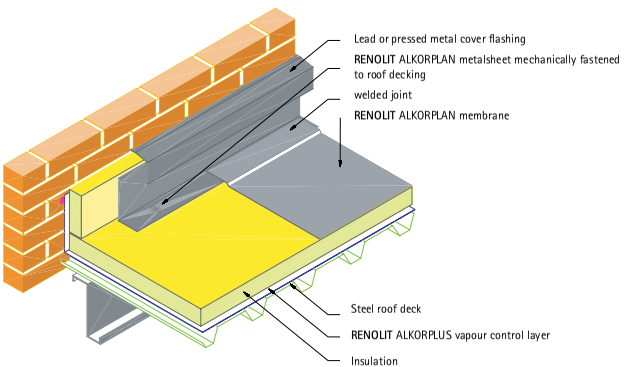
F

Axonometric F3

Typical Wall Abutment

This view shows how the detail is produced, built up from the steel decking, with the **RENOLIT** ALKORPLUS vapour control layer and insulation laid over. The **RENOLIT** ALKORPLAN metalsheet is mechanically fastened to the decking and the **RENOLIT** ALKORPLAN membrane is welded onto the **RENOLIT** ALKORPLAN metalsheet.

Note:
If wall construction is not insulated block, then insulation will be required to a minimum height of 300 mm.

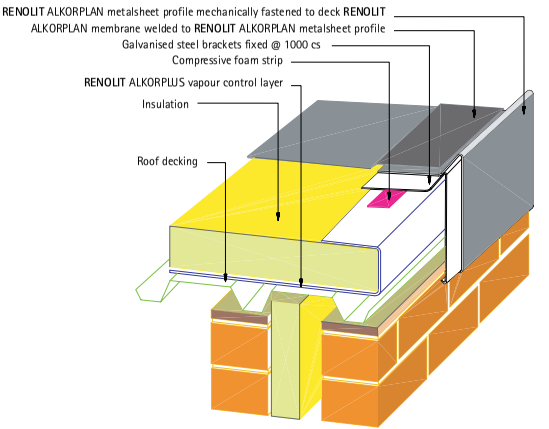

Lead or pressed metal cover flashing
RENOLIT ALKORPLAN metalsheet mechanically fastened to roof decking
welded joint
RENOLIT ALKORPLAN membrane
Steel roof deck
RENOLIT ALKORPLUS vapour control layer
Insulation

F

Axonometric F4
Water-Check Kerb

Typically at the exposed head of a mono-pitched roof or along the exposed verges of all pitched roofs there is a requirement to contain the rainwater run-off. This detail produces a weathered upstand which prevents water spillage and provides a neat finish to the roof edge.

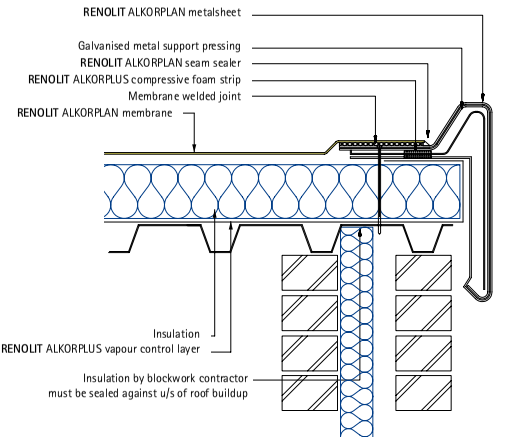
See further details below.


RENOLIT ALKORPLAN metalsheet profile mechanically fastened to deck **RENOLIT**
ALKORPLAN membrane welded to **RENOLIT** ALKORPLAN metalsheet profile
Galvanised steel brackets fixed @ 1000 cs
Compressive foam strip
RENOLIT ALKORPLUS vapour control layer
Insulation
Roof decking

F

Detail F4
Water-Check Kerb

Galvanised steel brackets are fastened at 1000 mm cs along the roof kerb. A compressive foam strip is laid over the brackets and **RENOLIT** ALKORPLAN metalsheet profile is mechanically fastened in place. The **RENOLIT** ALKORPLAN membrane is then welded to the **RENOLIT** ALKORPLAN metalsheet.

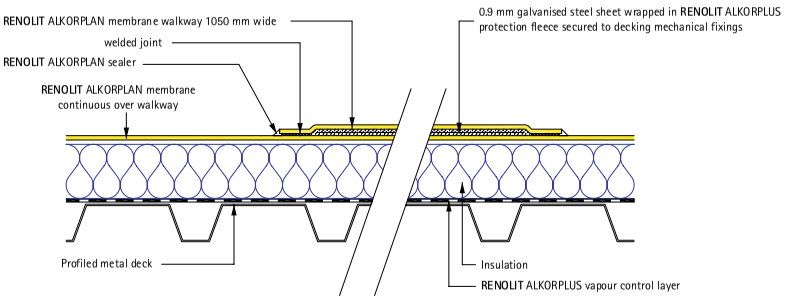

RENOLIT ALKORPLAN metalsheet
Galvanised metal support pressing
RENOLIT ALKORPLAN seam sealer
RENOLIT ALKORPLUS compressive foam strip
Membrane welded joint
RENOLIT ALKORPLAN membrane
Insulation
RENOLIT ALKORPLUS vapour control layer
Insulation by blockwork contractor
must be sealed against u/s of roof buildup

F

Detail F5

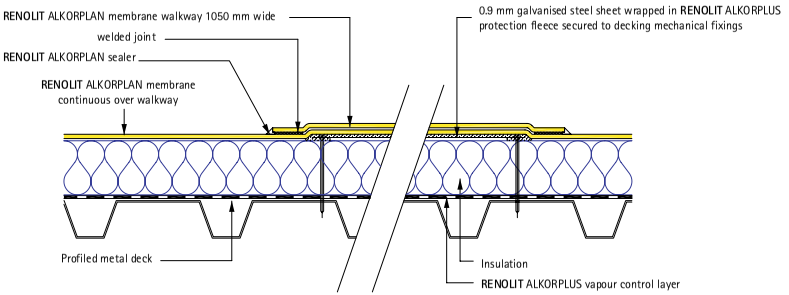
Walkway (method 1)

Once the installation of the **RENOLIT** ALKORPLAN membrane is completed, walkway routes can be formed by laying 0.9 mm galvanised steel sheets which are wrapped in **RENOLIT** ALKORPLUS protection fleece. This is then covered by 1050 mm wide **RENOLIT** ALKORPLAN walkway membrane, the edges of which are welded to the main **RENOLIT** ALKORPLAN roof membrane.


RENOLIT ALKORPLAN membrane walkway 1050 mm wide
welded joint
RENOLIT ALKORPLAN sealer
RENOLIT ALKORPLAN membrane continuous over walkway
0.9 mm galvanised steel sheet wrapped in **RENOLIT** ALKORPLUS protection fleece secured to decking mechanical fixings
Profiled metal deck
Insulation
RENOLIT ALKORPLUS vapour control layer

F

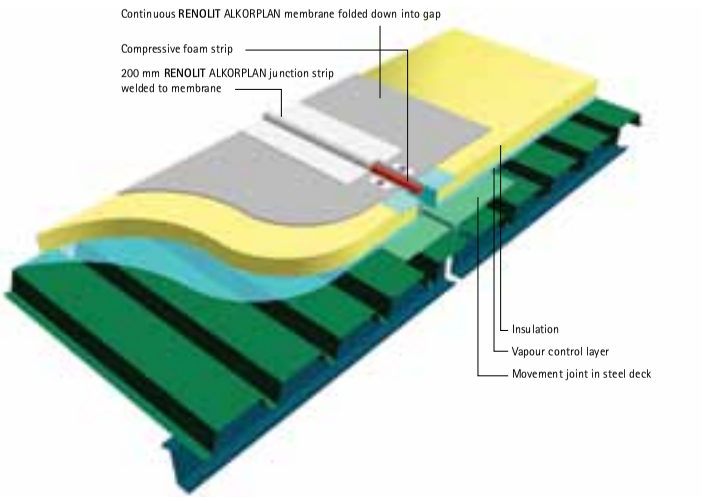
Detail F6
Walkway (method 2)
The walkway routes are formed by mechanically fastening
0.9 mm galvanised steel sheets which are wrapped in **RENOLIT** ALKORPLUS protection fleece prior to the installation of the **RENOLIT** ALKORPLAN membrane. This is covered by 1050 mm wide **RENOLIT** ALKORPLAN walkway membrane, the edges of which are welded to the **RENOLIT** ALKORPLAN roof membrane.


RENOLIT ALKORPLAN membrane walkway 1050 mm wide
welded joint
RENOLIT ALKORPLAN sealer
RENOLIT ALKORPLAN membrane continuous over walkway
0.9 mm galvanised steel sheet wrapped in **RENOLIT** ALKORPLUS protection fleece secured to decking mechanical fixings
Profiled metal deck
Insulation
RENOLIT ALKORPLUS vapour control layer

F

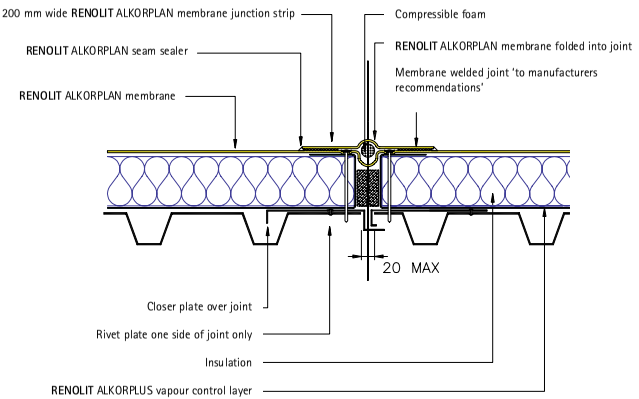
Axonometric F7
Typical Movement Joint
Although **RENOLIT** ALKORPLAN reinforced membrane is flexible, modern construction often requires larger movement tolerances to be allowed for at specifically designed movement joints. **RENOLIT** ALKORPLAN junction strip has the strength and elasticity to cope with these conditions.

See further details below.


Continuous **RENOLIT** ALKORPLAN membrane folded down into gap
Compressive foam strip
200 mm **RENOLIT** ALKORPLAN junction strip welded to membrane
Insulation
Vapour control layer
Movement joint in steel deck

F

Detail F7
Typical Movement Joint
RENOLIT ALKORPLAN membrane is laid continuously over the movement joint gap and a fold is formed to allow movement along this joint line.
A strip of compressive foam is inserted and a cover of **RENOLIT** ALKORPLAN junction strip is welded over the top.

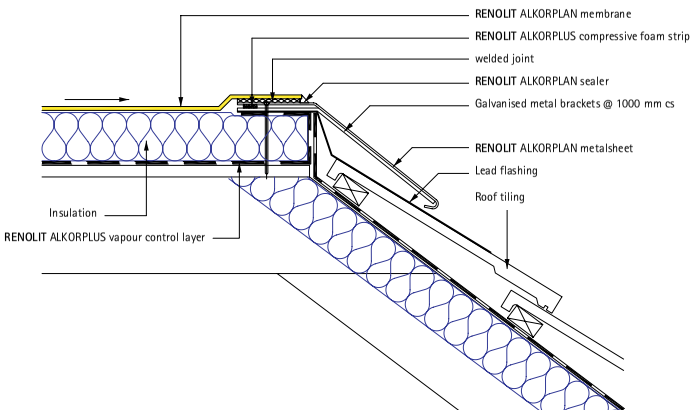

200 mm wide RENOLIT ALKORPLAN membrane junction strip
RENOLIT ALKORPLAN seam sealer
RENOLIT ALKORPLAN membrane
Compressible foam
RENOLIT ALKORPLAN membrane folded into joint
Membrane welded joint 'to manufacturers recommendations'
20 MAX
Closer plate over joint
Rivet plate one side of joint only
Insulation
RENOLIT ALKORPLUS vapour control layer

F

Detail F8

Typical Drip Detail to Head of Tiled Roof

RENOLIT ALKORPLAN metalsheet is mechanically fastened to the substrate forming a drip profile over the top of a lead under-flashing at the head of the tiled roof. The **RENOLIT** ALKORPLAN membrane is then welded to the **RENOLIT** ALKORPLAN metalsheet to produce a watertight detail.

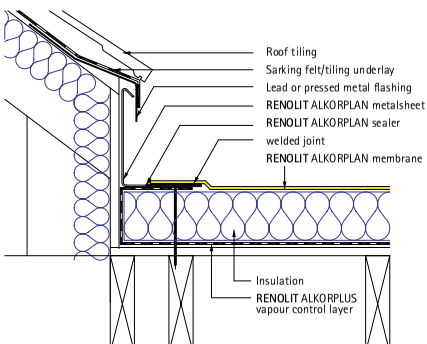


F

Detail F9

Typical Upstand to Base of Tiled Roof

RENOLIT ALKORPLAN membrane is welded to a preformed **RENOLIT** ALKORPLAN metalsheet section forming a watertight upstand at the abutment of the tiled roof. This detail is commonly used to form an abutment to an existing tiled roof or a new construction which incorporates a mixture of **RENOLIT** ALKORPLAN membrane and tiles.

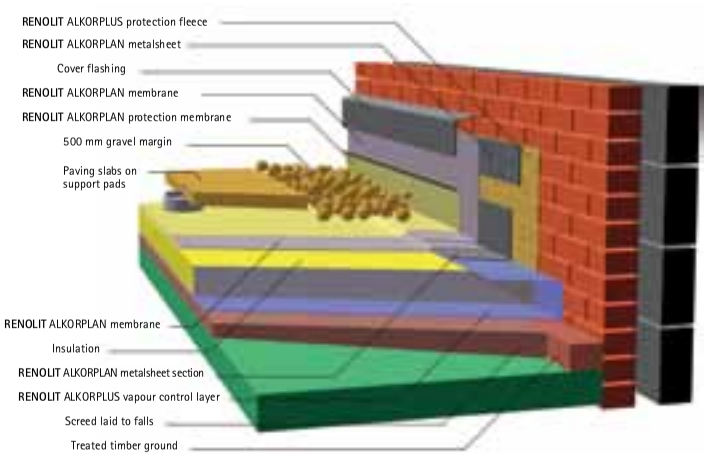


L

Axonometric L1
Warm Roof
The warm roof detail has the insulation layer immediately below the **RENOLIT** ALKORPLAN membrane.
The roof structure remains warm, preventing condensation forming and therefore, it does not require any means of ventilation.

See below for further details.

Note:
If wall construction is not insulated block, then insulation will be required to a minimum height of 300 mm.



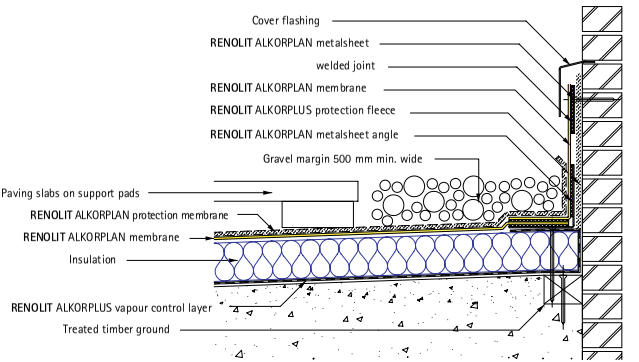
L

Detail L1

Warm Roof Paved with Gravel Margin

RENOLIT ALKORPLAN membrane is laid over insulation and vapour control layer. A perimeter upstand is formed using **RENOLIT** ALKORPLAN membrane and **RENOLIT** ALKORPLAN metalsheet sections. This is covered by **RENOLIT** ALKORPLUS protection layer ready to receive the paving and gravel margin.

Note:
If wall construction is not insulated block, then insulation will be required to a minimum height of 300 mm.



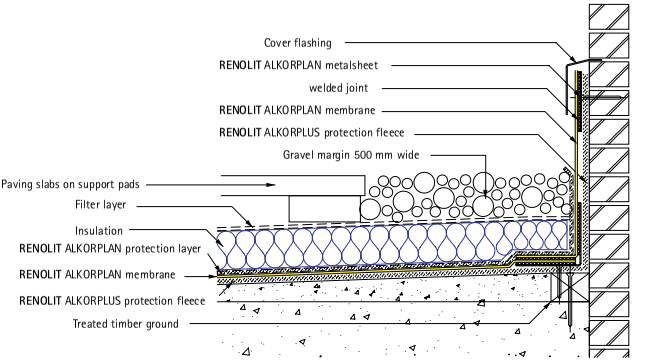
L

Detail L2

Inverted Roof – Paved with Gravel Margin

In contrast to the Warm Roof L1 the insulation is immediately above the **RENOLIT** ALKORPLAN membrane.
For this reason a moisture resistant insulation must be specified.

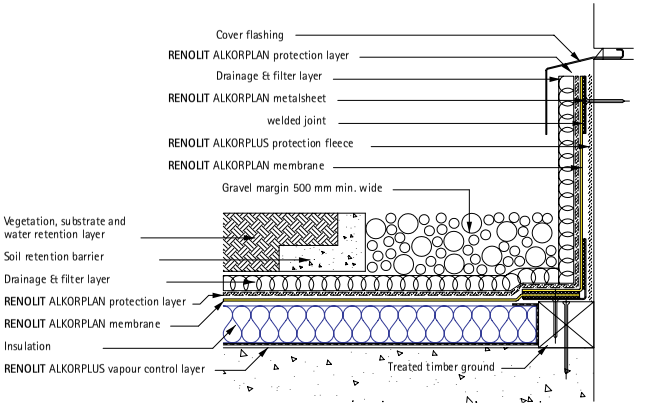
Note:
If wall construction is not insulated block, then insulation will be required to a minimum height of 300 mm.



L

Detail L3
Garden Roof with Gravel Margin
The formation of a roof garden is a simple adaptation of the warm roof system Detail L1.
The gravel margin must be retained to allow drainage and to prevent accidental damage to the upstand detail.

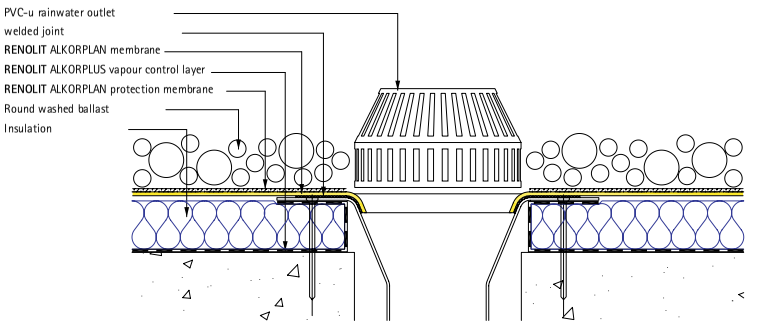
Note:
If wall construction is not insulated block, then insulation will be required to a minimum height of 300 mm.



L

Detail L4
PVC-u Rainwater Outlet
The PVC-u rainwater outlet is mechanically fastened to the roof substrate.
RENOLIT ALKORPLAN membrane is then laid over the outlet and the membrane is cut and welded to the outlet flange.

Note:
Outlet body must be insulated from below.

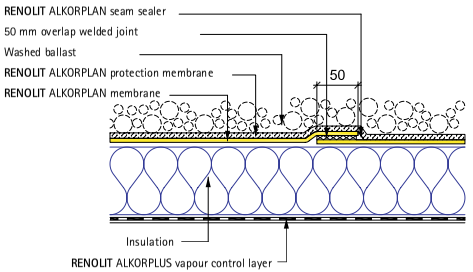


L

Detail L5

Loose Laid Ballasted Seam

When a ballasted system is being used the width of the overlap seam to the **RENOLIT** ALKORPLAN membrane is no more than 50 mm, which is welded. **RENOLIT** ALKORPLAN protection layer is laid over the membrane followed by the ballast material.

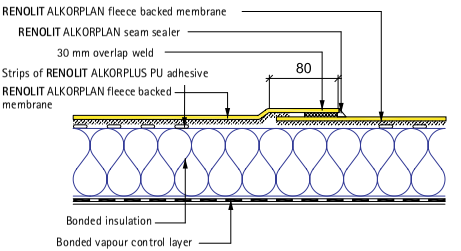


A

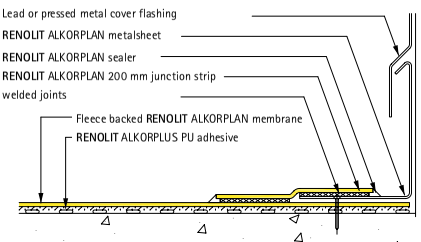
Detail A1

Partially Bonded Seam

When **RENOLIT** ALKORPLAN membrane is laid into the **RENOLIT** ALKORPLUS PU adhesive, the seam detail must be compatible to maintain the integrity of the membrane. This detail uses a 30 mm weld with an 80 mm overlap. The **RENOLIT** ALKORPLAN fleece backed membrane has a fleece-free selvedge for this purpose.



Detail A2
Typical Abutment Detail
RENOLIT ALKORPLAN membrane is laid up to the base of the abutment face and trimmed.
RENOLIT ALKORPLAN metalsheet is mechanically fastened over this, forming an upstand.
This is then covered on the horizontal plane with 200 mm **RENOLIT** ALKORPLAN junction strip.
The detail is finished off with a lead or pressed metal cover flashing.


Lead or pressed metal cover flashing
RENOLIT ALKORPLAN metalsheet
RENOLIT ALKORPLAN sealer
RENOLIT ALKORPLAN 200 mm junction strip
welded joints
Fleece backed RENOLIT ALKORPLAN membrane
RENOLIT ALKORPLUS PU adhesive

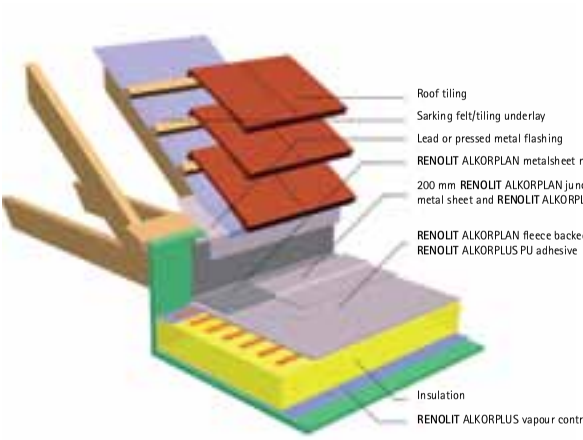
A

Axonometric A3

Typical Upstand to Base of Tiled Roof

This view illustrates how the abutment detail is applied to the junction of a tiled roof which discharges water onto the **RENOLIT** ALKORPLAN membrane roof below.

The upstand and flashing details ensures that splashed water runoff is not able to penetrate the roof envelope.

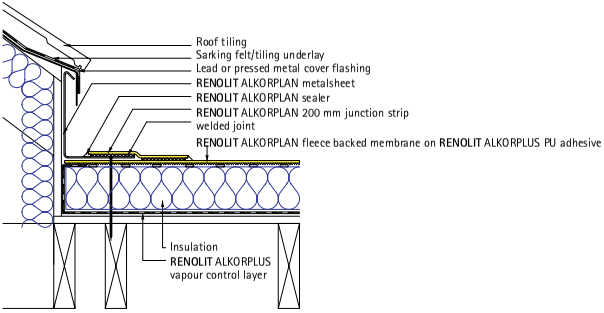

Roof tiling
Sarking felt/tiling underlay
Lead or pressed metal flashing
RENOLIT ALKORPLAN metalsheet mechanically fastened to roof deck
200 mm **RENOLIT** ALKORPLAN junction strip welded to **RENOLIT** ALKORPLAN metal sheet and **RENOLIT** ALKORPLAN membrane
RENOLIT ALKORPLAN fleece backed membrane on **RENOLIT** ALKORPLUS PU adhesive
Insulation
RENOLIT ALKORPLUS vapour control layer

A

Detail A3

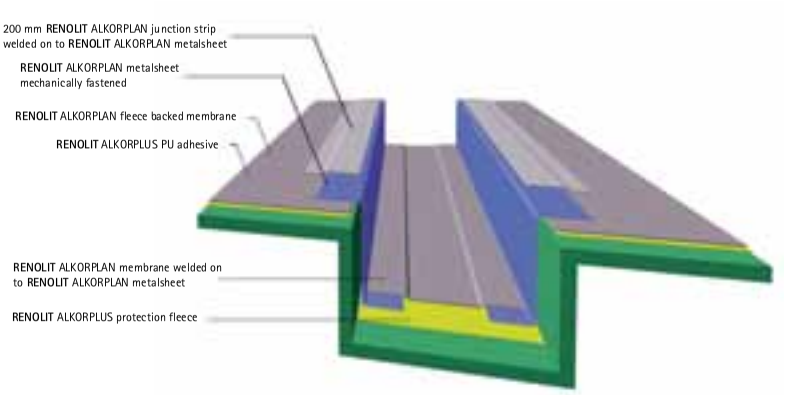
Typical Upstand to Base of Tiled Roof

RENOLIT ALKORPLAN membrane is laid up to the base of the abutment face and trimmed. **RENOLIT** ALKORPLAN metalsheet is mechanically fastened over this forming an upstand. This is then covered on the horizontal plane with 200 mm **RENOLIT** ALKORPLAN junction strip.
The detail is finished off with a lead or pressed metal cover flashing.



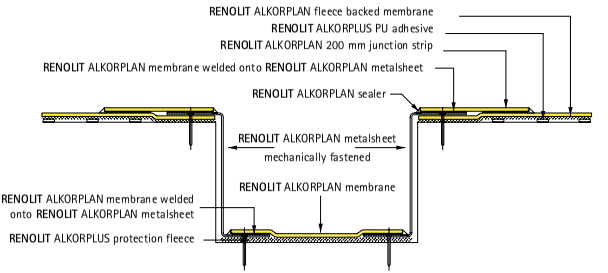
A

Axonometric A4
Box Gutter
This view illustrates the method of constructing a box gutter between two sections of **RENOLIT** ALKORPLAN membrane roofing.
The same principle can be adapted for use as a parapet gutter where one face is an abutment.


200 mm **RENOLIT** ALKORPLAN junction strip welded on to **RENOLIT** ALKORPLAN metalsheet
RENOLIT ALKORPLAN metalsheet mechanically fastened
RENOLIT ALKORPLAN fleece backed membrane
RENOLIT ALKORPLUS PU adhesive
RENOLIT ALKORPLAN membrane welded on to **RENOLIT** ALKORPLAN metalsheet
RENOLIT ALKORPLUS protection fleece

Detail A4
Box Gutter

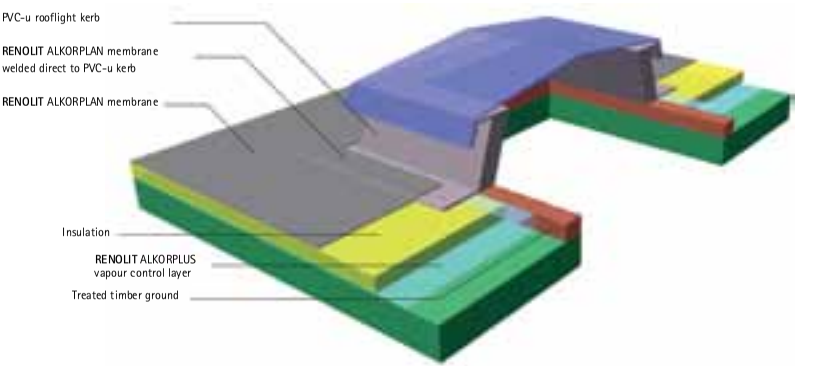
RENOLIT ALKORPLAN fleece backed membrane is laid over the main roof sections and trimmed to the lip of the gutter.
RENOLIT ALKORPLUS protection fleece is laid in the sole of the gutter followed by **RENOLIT** ALKORPLAN metalsheet mechanically fastened to the sole and lip either side of the gutter.
RENOLIT ALKORPLAN membrane is then welded to this and a 200 mm **RENOLIT** ALKORPLAN junction strip is welded over the lip detail.


RENOLIT ALKORPLAN fleece backed membrane
RENOLIT ALKORPLUS PU adhesive
RENOLIT ALKORPLAN 200 mm junction strip
RENOLIT ALKORPLAN membrane welded onto RENOLIT ALKORPLAN metalsheet
RENOLIT ALKORPLAN sealer
RENOLIT ALKORPLAN metalsheet
mechanically fastened
RENOLIT ALKORPLAN membrane
RENOLIT ALKORPLAN membrane welded
onto RENOLIT ALKORPLAN metalsheet
RENOLIT ALKORPLUS protection fleece

FLA

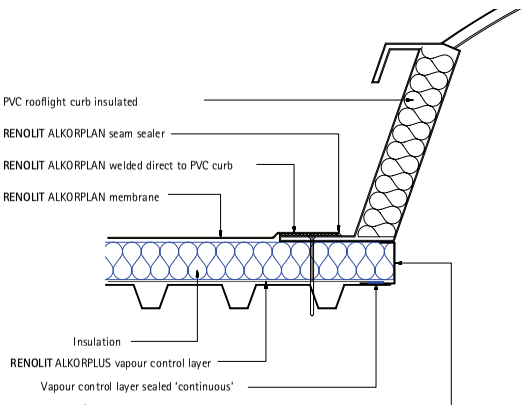
Axonometric G1
Rooflight Kerb Detail
The installation of proprietary rooflights is simplified by the compatibility of **RENOLIT** ALKORPLAN membrane and PVC-u.
The rooflight unit is positioned and then mechanically fastened to the roof deck.
The **RENOLIT** ALKORPLAN membrane is then laid over and welded to the rooflight kerb flange.

See further details below.



F
L
A

Detail G1
Rooflight Kerb Detail
The rooflight unit is mechanically fastened to the roof deck.
The **RENOLIT** ALKORPLAN membrane is then laid over the PVC-u rooflight kerb and the overlapped **RENOLIT** ALKORPLAN membrane is heat welded to it.

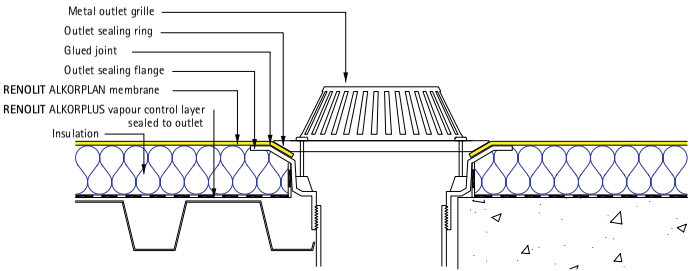

PVC rooflight curb insulated
RENOLIT ALKORPLAN seam sealer
RENOLIT ALKORPLAN welded direct to PVC curb
RENOLIT ALKORPLAN membrane
Insulation
RENOLIT ALKORPLUS vapour control layer
Vapour control layer sealed 'continuous'
Support/closer welded metal frame

F
L
A

Detail G2

Metal Rainwater Outlet

The **RENOLIT** ALKORPLAN membrane is laid over the previously installed outlet body section.
The membrane is then cut and glued to the outlet flange.
The outer sealing ring is then tightened into place, clamping the membrane edge, thus forming a watertight detail.

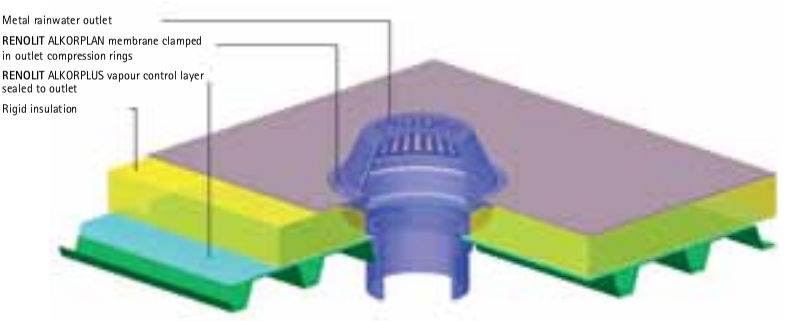


FLA

Axonometric G2
Metal Rainwater Outlet

This axonometric view of the detail shows how the layers are built up.
The **RENOLIT** ALKORPLUS vapour control layer is laid out over the roof decking, laps and penetrations are tape sealed.
The insulation is laid on top of this, followed by the **RENOLIT** ALKORPLAN membrane which is then carefully cut to fit into the outlet, then glued and clamped into the compression rings.

Note:
Outlet manufacturers' details and recommendations may vary.

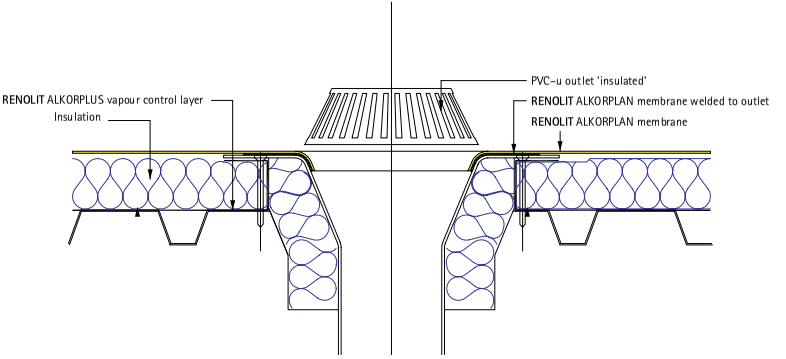

Metal rainwater outlet
RENOLIT ALKORPLAN membrane clamped in outlet compression rings
RENOLIT ALKORPLUS vapour control layer sealed to outlet
Rigid insulation

F
L
A

Detail G3

PVC-u Rainwater Outlet

The PVC-u rainwater outlet is installed in the roof and connected prior to the installation of the **RENOLIT** ALKORPLAN membrane. The membrane is laid over the outlet body and carefully cut to allow the **RENOLIT** ALKORPLAN membrane be heat welded to the PVC-u outlet flange.

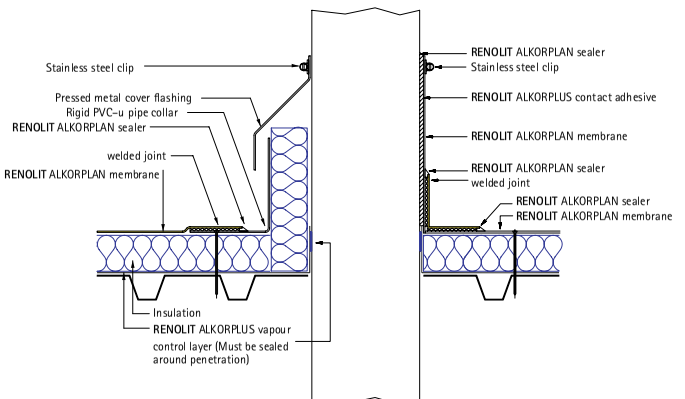


F
L
A

Detail G4

Penetration for all RENOLIT ALKORPLAN Systems

There are two methods of sealing penetrations to the **RENOLIT** ALKORPLAN roof membrane.
These are : the PVC-u pipe collar which is welded to the **RENOLIT** ALKORPLAN membrane ; or the built-up collar formed from a collar of **RENOLIT** ALKORPLAN membrane secured by a jubilee clamp.

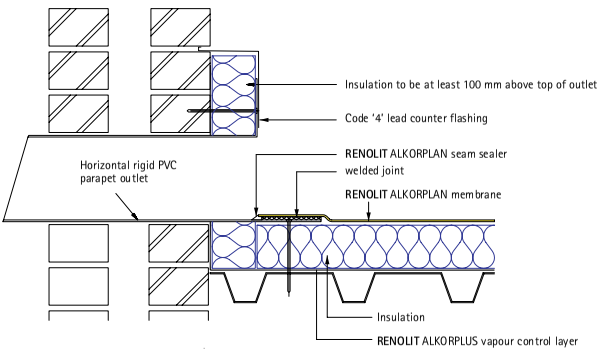


FLA

Detail G5

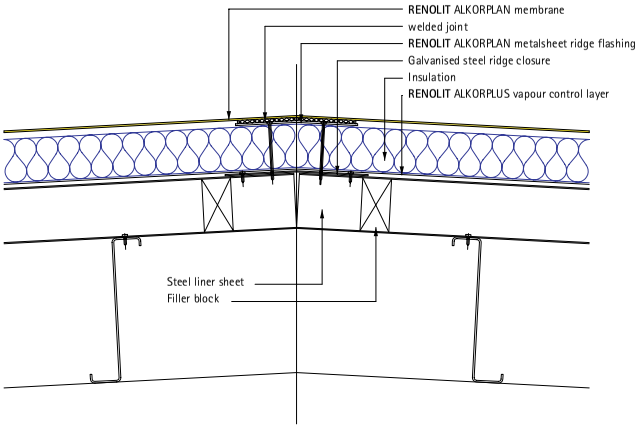
Balcony Outlet

The PVC-u balcony outlet can be produced in a variety of sizes with either circular or square outlet spigots. They are produced using 4 mm thick PVC-u sheet fabricated by specialists to a design agreed with the specifier. The outlet is mechanically attached to the structure; the membrane is laid over the flat flanges of the outlet and welded to the PVC-u unit.


Insulation to be at least 100 mm above top of outlet
Code '4' lead counter flashing
RENOLIT ALKORPLAN seam sealer
welded joint
RENOLIT ALKORPLAN membrane
Horizontal rigid PVC parapet outlet
Insulation
RENOLIT ALKORPLUS vapour control layer

F
L
A

Detail G6
Ridge
RENOLIT ALKORPLAN metalsheet is applied in continuous sections to reinforce a potentially vulnerable location at the junction of the insulation boards. This also ensures that the membrane is anchored to the structure where the sheet ends coincide with the ridge line.



Overlap on rolls of Vapour Control Layer	100 mm
Maximum Distance of **RENOLIT** ALKORPLAN metalsheet Fixing Centres	250 mm
Gap between Sections of **RENOLIT** ALKORPLAN metalsheet	3-5 mm
Minimum Width of Horizontal Leg of **RENOLIT** ALKORPLAN metalsheet Sections	70 mm
Maximum Distance from Fixing to Edge of Membrane or Metal	30 mm
Minimum Distance from Fixing to Edge of Membrane or Metal	10 mm
Minimum Width of Membrane Sidelap:	
Mechanically Fastened System	100 mm
Adhered System	80 mm
Ballasted System	50 mm
Minimum Overlap at Roll Ends	100 mm
Maximum Overlap at Roll Ends	250 mm
Minimum Width of Seam Welds and Membrane Overlap over Metal	50 mm
Minimum Depth of Seal in Capillaries	30 mm
Minimum Diameter of Patches	200 mm
Minimum Overlap of Patches from Extent of Damage (weld + unwelded area)	100 mm
Lowest Temperature for Solvent Welding	5° C

United Kingdom:

RENOLIT (UK) Cramlington Ltd, Station Road
Cramlington, Northumberland NE23 8AQ - United Kingdom
T +44 1670 718283 - F +44 1670 590096 - renolit.cramlington@renolit.com

LAYDEX Ltd. - Unit 3 - Allied Industrial Estate - Kylemore Road - Dublin 10
T +353(0) 1 642 6600 - F +353 (0) 1 642 6601 - sales@laydex.ie

LAYDEX (NI) Ltd. - Units 4 & 5 Falcon Way - Belfast BT 12 6 SQ
T + 44 (0) 2890 382 223 - F + 44 (0) 2890 382 230

For other countries:

RENOLIT Belgium N.V - Export dpt
Industriepark De Bruwaan 9 - 9700 OUDENAARDE - Belgium
T B +32 55 33 98 51 - F +32 55 31 86 58 - renolit.belgium@renolit.com

RENOLIT
Rely on it.

SQUAD.BE
R2270EX0613